

THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD
OF PATENT APPEALS AND INTERFERENCES

In re application of) Group Art Unit 1617
Bartley D. Maxon & Michael S. Starch) Examiner San Ming R. Hui
Serial No. 10/024,983) Appeal No.
Filed December 19, 2001)
Title Stabilization of Vitamins in Water-in-Silicone)
Oil (W/O) Emulsions)
Docket No. DC 4969) October 9, 2002

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APPELLANTS' BRIEF UNDER 37 CFR 1.192(a)

Director of the United States Patent & Trademark Office
Washington, DC 20231

Sir:

This is an appeal from the Final Rejection dated October 1, 2002, in which Claims 7-12 were finally rejected. Appellants' claims have been at least twice rejected, and so the appeal is proper under 35 USC 134.

REAL PARTY IN INTEREST

The real party in interest in this application is the assignee of record of the entire interest. The assignee of record of the entire interest is Dow Corning Corporation, Midland, Michigan. The assignment was recorded on December 19, 2001 Reel 012405 Frame 0902.

RELATED APPEALS AND INTERFERENCES

Appellants, appellants' legal representative, or the assignee of record, do not know of any related appeal or interference in any other application, which would directly affect, or be directly affected by, or have any bearing on, the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1-6 were originally filed in the application. In an amendment filed April 10, 2002, Claims 1-6 were canceled in favor of Claims 7-12, which are the claims pending in the application. These claims were finally rejected and are the subject matter of this appeal.

STATUS OF AMENDMENTS

No amendments have been filed subsequent to the final rejection under 37 CFR 1.116.

SUMMARY OF THE INVENTION

This is a simple invention and it is directed to a water-in-oil (W/O) emulsion, the components of which are (i) a linear silicone polyether, (ii) a non-emulsifying α,ω -diene crosslinked silicone elastomer having no oxyalkylene units in its structure, and (iii) a nonionic organic emulsifier. The W/O emulsion is free of silicone elastomers prepared using unsaturated compounds containing silicon atoms.

Some examples of component (ii) are carboxylated alcohol ethoxylates, carboxylated alkylphenol ethoxylates, ethoxylated alcohols, ethoxylated fatty acids, ethoxylated fatty esters, ethoxylated fatty oils, glycerol esters, polyglycerol fatty esters, ethoxylated glycerol esters, sorbitan derivatives, and sucrose esters and their derivatives.

The practical utility of these W/O emulsions is for delivery of vitamins to products in the personal marketing arena, wherein vitamins have benefit in applications to the hair, skin, and underarm areas of the human body.

For example, Vitamin A and Vitamin C, when incorporated into water-in-silicone oil (W/O) compositions for skin care applications, have met with some degree of success in the market place. However, the active form of Vitamin E, i.e., tocopherol, typically exhibits signs of degradation and instability in W/O systems. There is, therefore, a need in the personal care arena, for stabilized vitamin, especially stabilized Vitamin E containing water-in-silicone oil emulsions (W/O), which the instant invention provides.

ISSUES

There is only a single issue for consideration by The Board of Patent Appeals and Interferences. The issue is whether Claims 7-12 are unpatentable over Lin US 6207717 in view of Schilling US 4150048, Schulz US 5654362, Remington (a Pharmaceutical Sciences Publication), and Zhang US 5889108, under 35 USC 103(a).

GROUPING OF CLAIMS

The pending claims stand or fall together as a group.

ARGUMENT

As noted above, Claims 7-12 stand finally rejected as being unpatentable over Lin US 6207717, in view of Schilling US 4150048, Schulz US 5654362, Remington (a Pharmaceutical Sciences Publication), and Zhang US 5889108, under 35 USC 103(a).

Lin is relied upon by the Examiner for its showing of a W/O emulsion in which Vitamin E and an elastomeric silicone polyether are described. This seems inconsistent with what is being claimed in independent Claim 7, as Appellants claims specifically excludes non-emulsifying α,ω -diene crosslinked silicone elastomers having oxyalkylene units in their structure. NOT
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In any event, Schilling is relied upon by the Examiner in the rejection, for its teaching of a system containing a linear silicone polyether. Schilling, however, is directed to the preparation of foam products rather than water-in-oil (W/O) emulsions as defined in the claims. In particular, the linear silicone polyether in Schilling is described as being primarily useful for preparing polyurethane foams rather than W/O emulsions. Rebut
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More particularly, the description in Schilling indicates that the silicone-polyether copolymers described as being linear in structure, find use, for example, as wetting agents, thickeners, emulsifiers, antifoaming agents, urethane foam stabilizers for foams of various types (rigid, polyester, flexible, polyether, frothed, high resiliency, semiflexible, microcellular, etc.), lubricants, and aqueous aerosol shave cream stabilizers. Schilling indicates that reactants can be chosen to obtain a novel product which finds use as an aqueous wetting agent. Another novel product Schilling states is that it can be useful as a surfactant for rigid polyurethane foam. Still another novel product is as a surfactant for flexible polyether foam.

Certain other of Schilling's high molecular weight, linear, nonhydrolyzable, siloxane-polyether (AB)_n block copolymers are said to be useful as surfactants for making frothed urethane foam and for making open-celled rigid urethane foam. Because of their hydrostable nature, Schilling states that they are useful in a variety of applications in which they come into contact with water or other protic solvents wherein hydrolyzable linear silicone polyether copolymers would be unstable and, thus, not suitable. As examples, Schilling notes aqueous foaming and thickening agents, water soluble lubricants, aqueous premixes for various types of urethane foams, and aqueous emulsions. No mention is made however of W/O emulsion compositions of the type defined in Appellants' Claims 7-12.

1. not by itself
Thus, Schilling fails to indicate that some benefit would or could be derived by adding a Vitamin to a polyurethane foam composition, let alone Vitamin E. In fact, it is not seen that a vitamin would or could even perform a function in a polyurethane foam composition.

The Examiner then relies upon Schulz for its teaching of the non-emulsifying α,ω -diene crosslinked silicone elastomers having no oxyalkylene units in its structure, a component of Appellants' claimed W/O emulsions, and apparently considers that it would be obvious to one skilled in the art to incorporate such non-emulsifying α,ω -diene crosslinked silicone elastomers having no oxyalkylene units in their structure, in Lin.

In reality, Lin, Schilling, and Schulz, have nothing in common with one another, and it is therefore not seen wherein one skilled in the art would even be motivated to add a non-emulsifying α,ω -diene crosslinked silicone elastomers having no oxyalkylene units in its structure, to Lin, as there is no apparent need in Lin for any non-emulsifying α,ω -diene crosslinked silicone elastomers having no oxyalkylene units in their structure. Furthermore, neither Schilling nor Schulz mention anything about the preparation of an emulsion, let alone a W/O emulsion.

Remington is relied upon by the Examiner as showing the "nonionic organic emulsifier" component of Appellants' W/O emulsion. However, Remington points out that the nonionic surfactants which are described are useful as emulsifying agents for forming O/W emulsions, rather than W/O emulsions as claimed. Not only is this inconsistent with the composition being claimed, but there is no need in Lin for any such nonionic organic emulsifiers.

Zhang is applied by the Examiner as showing the solvent component of the W/O composition in Appellants' claims, and apparently considers that it would also be obvious for one skilled in the art to add such a solvent in Lin. However, there is no apparent need in Lin for such a solvent, and therefore no reason for one skilled in the art to add such a solvent to the primary reference Lin.

Other than an apparent reliance upon Appellants' own disclosure, Appellants fail to see any cogent reason for combining the five cited references in the manner suggested by the Examiner.

Thus, there is no suggestion to combine the references. It appears that if an invention is different from what is disclosed in one reference, but the difference is such that combination with another reference would lead to what is claimed, the obviousness question then should require an inquiry into whether there is a reason, suggestion, or motivation, to make that combination. So that before a conclusion of obviousness may be made based on a combination of references, there should be a reason, suggestion, or motivation, to lead an inventor to combine references. Such a suggestion may come expressly from the references themselves. In this case, it does not.

It may come from knowledge of those skilled in the art, that the references or disclosures in the references, are known to be of special interest or importance in the particular field. In this case, they are not.

It may also come from the nature of the problem to be solved, leading inventors to look to the references relating to possible solutions to the problem. In this case, it does not.

CONCLUSION

For the foregoing reasons, the Honorable Board of Appeals is requested to reverse the Examiner's rejection of Claims 7-12.

HEARING

An oral hearing is not requested.

Respectfully submitted,

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APPENDIX

7. A composition comprising a water-in-oil (W/O) emulsion having a discontinuous aqueous phase dispersed in a continuous oil phase, the continuous oil phase of the W/O emulsion comprising a linear silicone polyether, the linear silicone polyether having a rake type structure wherein the polyoxyethylene or polyoxyethylene-polyoxypropylene copolymeric units are grafted onto a siloxane backbone, or the linear silicone polyether having an ABA block copolymeric structure wherein A represents the polyether portion and B represents the siloxane portion of an ABA structure; a non-emulsifying α,ω -diene crosslinked silicone elastomer having no oxyalkylene units in its structure; and a nonionic organic emulsifier selected from the group consisting of carboxylated alcohol ethoxylates, carboxylated alkylphenol ethoxylates, ethoxylated alcohols, ethoxylated fatty acids, ethoxylated fatty esters, ethoxylated fatty oils, glycerol esters, polyglycerol fatty esters, ethoxylated glycerol esters, sorbitan derivatives, sucrose esters and their derivatives, and glucose esters and their derivatives; the W/O emulsion being free of silicone elastomers prepared using unsaturated compounds containing silicon atoms.

8. A composition according to Claim 7 in which one of the discontinuous aqueous phase of the W/O emulsion or the continuous oil phase of the W/O emulsion contains a water soluble active ingredient or an oil soluble active ingredient, respectively.

9. A composition according to Claim 8 in which the active ingredient is selected from the group consisting of Vitamin B₁, Vitamin B₂, Vitamin B₆, Vitamin B₁₂, niacin, folic acid, biotin, pantothenic acid, Vitamin E, Tocopherol, α -Tocopherol, β -Tocopherol, γ -Tocopherol, Δ -Tocopherol, Tocophersolan, Tocopheryl Acetate, Tocopheryl Palmitate, Tocopheryl Linoleate, Tocopheryl Nicotinate, Tocopheryl Succinate, and mixtures thereof.

10. A composition according to Claim 7 in which the continuous oil phase of the W/O emulsion contains 0.2-3.0 percent by weight of the linear silicone polyether, 0.2-10 percent by weight of the α,ω -diene crosslinked silicone elastomer, and 0.1-4.0 percent by weight of the nonionic organic emulsifier, the balance of the W/O emulsion containing a solvent and water.

11. A composition according to Claim 10 in which the solvent is a volatile cyclic alkyl siloxane with the formula $(R''_2SiO)_d$ or a volatile linear alkyl siloxane with the formula $R''_3SiO(R''_2SiO)_eSiR''_3$ in which R'' is an alkyl group containing 1-6 carbon atoms, d is 3-6 and e is 0-5.

12. A composition according to Claim 11 in which the solvent is selected from the group consisting of hexamethylcyclotrisiloxane, octamethylcyclotetrasiloxane, decamethylcyclopentasiloxane, dodecamethylcyclohexasiloxane, hexamethyldisiloxane, octamethyltrisiloxane, decamethyltetrasiloxane, dodecamethylpentasiloxane, tetradecamethylhexasiloxane, and hexadecamethylheptasiloxane.